4.0 ENVIRONMENTAL CONSEQUENCES

This chapter presents the results of the analysis of potential environmental effects associated with the Proposed Action and the No-Action Alternative. Changes to the natural and human environments that would result from the Proposed Action were evaluated relative to the existing environmental conditions described in Chapter 3.0 and against threshold values for significance described for each resource area. Required and recommended mitigation measures are provided to reduce potential impacts resulting from the Project Alternatives.

The term "significant impact" and its application to the Proposed Action are used as defined in the CEQ regulations, 40 CFR, Part 1508, Section 1508.27, *Significantly:* "Significantly, as used in NEPA, requires considerations of both context and intensity."

Context "means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the Project Alternatives. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than the world as a whole. Both short- and long-term effects are relevant."

Intensity "refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following should be considered in evaluating intensity:

- Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance that the effect will be beneficial.
- The degree to which the Proposed Action affects public health or safety.
- Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.
- The degree to which the effects on the quality of the human environment are likely to be highly controversial.
- The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.
- The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.
- Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.
- The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in, or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

- The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the ESA of 1973.

- Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment."

4.1 HYDROLOGIC RESOURCES

A project would have a significant impact on hydrologic resources if it caused substantial flooding or erosion; adversely affected any significant body of water, such as a stream, lake, or bay; exposed people to reasonably foreseeable hydrologic hazards such as flooding or tsunamis; or adversely affected surface water or groundwater quality or quantity. An impact to hydrologic resources would also be considered significant if it contributed to a water supply shortage. The 100-year recurrence interval for floodplains, tsunami run-up, and tidal flood hazards is used as the significance criterion for flooding aspects.

4.1.1 Proposed Action

No flooding, erosion, or other hydrologic hazards would result from the Proposed Action. The Proposed Action would, however, provide several benefits to hydrologic resources. First, it would help to reduce the up to 60 percent shortfalls in water supply under which the westside CVP contractors currently operate. Second, it would reduce dependence on groundwater and groundwater overdraft in the westside CVP water districts. Finally, since water quality in the California Aqueduct is generally superior to groundwater quality, the Proposed Action would improve water quality for agricultural use and incidental groundwater recharge.

The Proposed Action would beneficially impact KCWA hydrologic resources by recharging existing groundwater basins and providing water for future beneficial use.

4.1.2 No-Action Alternative

Under the No-Action Alternative, eastside CVP contractors with an immediate need to transfer and exchange water would continue to be unable to provide this water to westside CVP contractors. This water would be transferred/exchanged among the eastside contractors, and would not necessarily go to the maximum beneficial use. Westside CVP contractors would continue to operate with up to 60 percent shortfalls in water supply.

4.1.3 Mitigation Measures

Adverse impacts from the Proposed Action would be less than significant, therefore no mitigation measures would be required.

4.2 BIOLOGICAL RESOURCES

Impacts to biological resources would be considered significant if special status species (endangered, threatened, rare, candidate, or special concern) or their habitats, as designated by federal, state, or local agencies, were affected directly or indirectly by project-related activities. In addition, impacts to biological resources would be considered significant if substantial loss, reduction, degradation, disturbance, or fragmentation occurred in native species habitats or in their populations. These impacts could be short- or long-term impacts; for example, short-term or temporary impacts may occur during

project implementation, and long-term impacts may result from the loss of vegetation and thereby loss of the capacity of habitats to support wildlife populations.

Federal agencies are required by Section 7 of the ESA to assess the effect of any project on federally listed threatened and endangered species. Under Section 7, consultation with the USFWS is required for federal projects if such actions directly or indirectly could affect listed or proposed species. In the case of species proposed for listing, Section 7 requires a conference with the USFWS. Reclamation will prepare a Biological Assessment and initiate Section 7 consultation with the USFWS.

4.2.1 Proposed Action

Water transfers/exchanges can result in land use change/intensification that may impact biological resources. Potential impacts to biological resources resulting from land use intensification include:

- Increased discharge of runoff/waste water resulting in reduced water quality for aquatic habitats;
- Increased agricultural tilling, mowing, harvesting, and pesticide application resulting in direct species mortality and an overall reduced survival of species in degraded habitats; and
- Induced growth on other lands required to support intensified land use--such as land use change, expansion of infrastructure, expansion of support networks, and intensification of recreational uses--resulting in habitat loss and degradation.

Potential impacts to biological resources resulting from land use changes are similar to those discussed under intensification, but also include:

- Conversion of native habitats;
- Degradation and fragmentation of remaining habitats;
- Loss of upland refugia near aquatic habitats;
- Fragmentation of wildlife migration or dispersal corridors; and
- Disruption of native seed dispersal.

Such potential impacts, however, are not expected under the Proposed Action. The Proposed Action would limit land conversion and monitor water use. Therefore, no significant direct or indirect impacts to listed threatened or endangered wildlife species or their habitats are anticipated in the SJV as a result of implementing the Proposed Action. No new agricultural land would be brought into production with the proposed water transfers, no change in land use would occur, and no habitat that supports special status species would be converted to agricultural, municipal, or industrial use. Water transfers would be monitored and annually reported to track the cumulative transfer activity including water quantity and end-use location under the Proposed Action.

Additionally, implementation of the Proposed Action would provide water for agricultural lands irrigated within the last 3 years; occur on a willing seller/willing buyer basis; occur within a single water year; use existing facilities and operations; result in no change of land use; prohibit native, untilled land from being

brought into agricultural production; result in no effect to federally listed species; be monitored and annually reported to Reclamation to calculate the cumulative transfer activity authorized under the Proposed Action, including the quantity and location where the end use of water occurs; and the beneficial use of CVP water and SWP water must be consistent with the water rights under which the water was appropriated.

The water available for transfer under the Proposed Action would be used beneficially with or without the Proposed Action. The 150,000 acre-feet of transferable water would come from Millerton Lake on the San Joaquin River, and is currently distributed to the Friant contractors. Under the Proposed Action, transfer/exchange of this water would occur with the CVP contractors on the westside. The Proposed Action, therefore, would not represent an increase in water withdrawals from the natural environment of the east side of the SJV and water would remain available to habitat communities and species as under current conditions. No change in existing habitat conditions would occur, therefore, no significant impacts to biological resources are anticipated.

4.2.2 No-Action Alternative

Under the No-Action Alternative, no significant impacts to biological resources would occur. Water from Millerton Lake would continue to be used for beneficial uses by the Friant contractors on the east side of the SJV. No change in existing habitat conditions or impacts to special status species would occur.

4.2.3 Mitigation Measures

No impacts or potential impacts to biological resources, including special status species, would occur under the Proposed Action. Therefore, no mitigation measures are required.

4.3 CULTURAL RESOURCES

An effect to cultural resources would be considered adverse if an undertaking altered, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register of Historic Places (NRHP) in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. For known cultural resource sites, rerouting or redesigning to avoid impacts is typically the recommended option. If rerouting or redesigning is not possible, subsurface testing is usually recommended to determine a site's value or data potentials relative to the NRHP, to assess possible adverse project effects, and to establish the physical relationship of site boundaries with the Area of Potential Effects (APE).

Cultural resources that must be given consideration in any undertaking involving federal assistance or licensing, prior to the authorization of expenditure of funds for such assistance or license, are those determined eligible for or listed on the NRHP. Such resources are evaluated utilizing established criteria, 36 CFR 60.4. The criteria are:

> The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and
>
> - That are associated with events that have made a significant contribution to the broad pattern of our history; or

- That are associated with the lives of persons significant in our past; or
- That embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- That have yielded, or may be likely to yield, information important in prehistory or history.

4.3.1 Proposed Action

The proposed water exchange/transfer would be accomplished through existing pipelines and canals. No new construction or ground disturbance would occur. Agricultural lands irrigated in the last 3 years would receive transfer/exchange water under the Proposed Action. Since these lands have already been subjected to ground disturbance and irrigation, much of the scientific value of potential cultural resources has been lost except on the most general level of analysis. Although there are small isolated sections within the project area that may contain undisturbed cultural resources, no new native, untilled land would be brought into agricultural production under the Proposed Action, and there is no potential for disruption of undisturbed cultural resource sites. Therefore, the Proposed Action would result in no significant impacts to cultural resources.

Up to 150,000 acre-feet per year of water would be conveyed via the Friant-Kern Canal to the KCWA. The storage of this water in established groundwater recharge basins, and its subsequent use, would not significantly impact cultural resources.

4.3.2 No-Action Alternative

There would be no impacts to cultural resources under the No-Action Alternative.

4.3.3 Mitigation Measures

Since potential impacts from the Proposed Action would be less than significant, no mitigation measures would be required.

4.4 AGRICULTURAL RESOURCES

An impact to agricultural resources would be considered significant if prime farmland, unique farmland, or farmland of statewide importance was converted to non-agricultural use; conflicted with existing zoning for agricultural use, or a Williamson Act contract; or involved other changes in the existing environment which, due to their location or nature, could result in the conversion of farmland to non-agricultural use.

4.4.1 Proposed Action

No negative impacts to agricultural resources would result from the Proposed Action. The Proposed Action would, however, maximize beneficial use of existing agricultural resources by providing water to fallow and sub-optimally irrigated agricultural lands. The Proposed Action, therefore, would aid in maximizing the productivity and value of agricultural resources.

Water delivered to the KCWA under the Proposed Action for groundwater recharge and subsequent beneficial use would cause no significant adverse impacts to agricultural resources. The Proposed Action would provide an additional benefit to agricultural resources, since this water would be available for future agricultural use.

4.4.2 No-Action Alternative

Under the No-Action Alternative, eastside CVP contractors with an immediate need to transfer and exchange water would continue to be unable to provide this water to westside CVP contractors. Westside CVP contractors would continue to operate with up to 60 percent shortfalls in water supply, resulting in fallow and sub-optimally irrigated agricultural lands.

4.4.3 Mitigation Measures

Since no significant impacts would result from the Proposed Action, no mitigation measures would be necessary.

4.5 LAND USE

Impacts to land use would be considered significant if they conflicted with established land uses in the area; disrupted or divided established land use configurations; represented a substantial change in existing land uses, such as conversion of prime agricultural land to other uses and/or a decrease in its productivity; conflicted with environmental plans or goals; or were inconsistent with adopted land use plans or permit requirements.

4.5.1 Proposed Action

The Proposed Action would not cause incompatibility with, disruption of, or division of established land use configurations. Transfers and exchanges would provide water for agricultural lands irrigated within the last 3 years. Under the Proposed Action, no native, untilled land would be converted for agricultural production. No facilities would be built or modified.

Inconsistency with adopted land use plans or permit requirements would not result from the Proposed Action. Current uses of all land potentially receiving water through transfers or exchanges would remain unchanged, and no land would be affected through the actual transfer processes.

Implementation of the Proposed Action would not conflict with any environmental plans or goals. The Proposed Action would, however, beneficially impact land use on fallow and sub-optimally irrigated agricultural lands.

The KCWA's involvement in the Proposed Action, as a recipient of up to 150,000 acre-feet per year of water that would be stored in established groundwater recharge basins and eventually put to beneficial use, would not negatively impact land use. No disruption or division of land uses, nor any other negative impact to land use, such as inconsistency with environmental plans or goals, would result from the Proposed Action.

4.5.2 No-Action Alternative

Under the No-Action Alternative, eastside CVP contractors with an immediate need to transfer and exchange water would continue to be unable to provide this water to westside CVP contractors. Westside

CVP contractors would continue to operate with up to 60 percent shortfalls in water supply, resulting in fallow and sub-optimally irrigated agricultural lands.

4.5.3 Mitigation Measures

There would be no significant adverse land use impacts under the Proposed Action. Therefore, no mitigation measures would be required.

4.6 AIR QUALITY

Air quality impacts are judged to be significant if the action being evaluated causes or contributes to a violation of state or federal ambient air quality standards; increases exposure of people to air pollution in concentrations in violation of ambient standards; causes pollutant or pollutant precursor emissions in excess of local air quality management agency impact significance thresholds; or violates federal, state, or local emission limitations for specific pollutants or emission sources. Current federal and SJVUAPCD regulations require that the Project Alternatives not have a significant impact on regional air quality, as reflected by the estimated long- and short-term impacts from the direct and indirect emission sources created by the action.

The SJVUAPCD recommends the following thresholds for significance of air quality impacts:

Ozone Precursor Emissions

Reactive organic gases (ROG) and NO_x should not exceed 10 tons/year.

PM_{10} Emissions

Complying with SJVAPCD Regulation VIII reduces potential impacts from PM_{10} emissions to less than significant. Large or high intensity construction projects near sensitive receptors may require mitigation beyond Regulation VIII.

CO Emissions

The project causes or contributes to an exceedance of state or federal ambient CO standards. This is to be determined by screening or modeling.

Hazardous Air Pollutant Emissions

The significance threshold for hazardous air pollutant emissions is based on the potential to increase cancer risk for the person with maximum exposure potential by 10 in one million. The non-cancer Hazard Index must be less than 1. This is to be determined by screening or modeling.

Odor Impacts

The significance threshold for odor impacts is based on distance of the odor source from people and complaint records for facility or similar facility. More than one confirmed complaint per year averaged over a three-year period, or three unconfirmed complaints per year averaged over a 3-year period would be a significant impact.

Construction Emissions

Same thresholds as above, but significance thresholds apply only during the construction period. Significance of ozone precursors are calculated annually.

4.6.1 Proposed Action

Lands that would receive transfer/exchange water under the Proposed Action are existing farmlands at varying levels of production, though some have been fallow for less than 3 years. Actively farmed lands and fallowed lands can serve as a source of fugitive dust emissions, particulate emissions, and of minimal emissions from farm equipment engines.

Fugitive dust emissions from irrigated lands are not significantly different from dry-farmed lands or fallow lands with a non-cultivated cover crop (Montgomery Watson 1995). Furthermore, emissions from farm equipment and transportation of agricultural materials would not significantly increase under the Proposed Action. Therefore, the Proposed Action would not result in a significant impact to air quality.

The role played by the KCWA in the Proposed Action–receiving, groundwater recharging, and eventually distributing up to 150,000 acre-feet of water per year that has been conveyed via the Friant-Kern Canal–will not impact air quality. No increase in emissions necessary to contribute to any violation of air quality standards or the exacerbation of any air quality problem would result from the Proposed Action.

4.6.2 No-Action Alternative

There would be no significant air quality impacts associated with the No-Action Alternative.

4.6.3 Mitigation Measures

Because the impacts from the Proposed Action would be less than significant, no mitigation measures would be required.

4.7 NOISE

A noise impact would be considered significant if it substantially increased the ambient noise levels for adjoining areas with sensitive receptors. Noise impact criteria are based partly on land use compatibility guidelines and partly on factors relating to the duration and magnitude of noise level changes. Temporary noise from the Project Alternatives that would be restricted to daytime hours would be considered significant only if it resulted in noise levels 10 dB or more above the land use compatibility criteria. A daytime noise level of 45 dBA is typically considered the threshold for interior noise in sensitive areas such as living quarters or offices. A daytime noise level of 65 dBA (i.e., allowing for loss of 20 dBA through building shell) is typically considered the threshold for exterior noise around these sensitive area.

4.7.1 Proposed Action

No significant impacts to noise are expected under the Proposed Action. Alterations in conditions that commonly create noise would not occur, as the actual movement of water being used in transfers/exchanges/groundwater recharge would in no way alter existing noise levels. Furthermore, no construction or other short-term noise-producing actions would be undertaken in implementing the Proposed Action.

4.7.2 No-Action Alternative

There would be no noise impacts associated with the No-Action Alternative.

4.7.3 Mitigation Measures

Since no significant impact to noise would result under the Proposed Action, no mitigation measures would be required.

4.8 GEOLOGY AND SOILS

The Proposed Action would result in a significant geologic impact if it increased the likelihood of, or resulted in exposure to, earthquake damage, slope failure, foundation instability, land subsidence, or other severe geologic hazards. It would be considered a significant geologic impact if it resulted in the loss of the use of soil for agriculture or habitat, loss of aesthetic value from a unique landform, or loss of mineral resources, or caused severe erosion or sedimentation.

4.8.1 Proposed Action

No construction would be required under the Proposed Action, nor would any modification to areas that may potentially contribute to or be affected by any geologic hazards take place. No disruptions or alterations in land uses would result from the proposed project, as only lands that have been irrigated within the last 3 years would potentially receive water through transfers/exchanges. Therefore, there would be no physical alterations that would potentially cause significant geologic impacts. Movement of water as a result of the Proposed Action would likewise not contribute to any change in conditions affecting the occurrence of or damage caused by geologic hazards. Moreover, the proposed project would not expose any individuals to situations in which greater risk of injury from or contact to geologic hazards may exist.

The Proposed Action would have the benefit of reducing groundwater pumping in eastside water districts, recharging groundwater in the KCWA, and, therefore, reducing subsidence in the project area.

Increased water supplies to agricultural lands in the western SJV and, in particular, WWD, have the potential to exacerbate existing soil drainage problems. However, CVP water deliveries to agricultural and urban users have been reduced by the passage of the CVPIA of 1992 and environmental restrictions have limited CVP deliveries to WWD to approximately 60 percent of contracted supply. Although the Proposed Action will potentially provide WWD with additional water supply, it is unlikely that this water will result in deliveries to WWD in excess of the historical average water supply. Therefore no significant impacts to geology and soils are expected under the Proposed Action.

4.8.2 No-Action Alternative

Under the No-Action Alternative, current trends in groundwater pumping and land subsidence would continue.

4.8.3 Mitigation Measures

Because the impacts from the Proposed Action would be less than significant, no mitigation measures would be required.

4.9 RECREATIONAL RESOURCES

Impacts to recreational resources would be considered significant if they result in a decline in the quality or quantity of existing recreational facilities or services, or exceed adopted state or local recreation planning standards.

4.9.1 Proposed Action

There would be no change to recreational resources under the Proposed Action. Therefore, no significant impacts would occur.

4.9.2 No-Action Alternative

Under the No-Action Alternative, there would be no change to recreational resources.

4.9.3 Mitigation Measures

Under the Proposed Action, there would be no impacts to recreational resources, therefore, no mitigation measures would be required.

4.10 SOLID WASTE MANAGEMENT

Impacts to the management of solid waste would be considered significant if they increased waste management requirements beyond available, permitted waste management capacities. Waste generation from projects would also have a significant impact if the quantities of waste interfered with waste diversion goals.

4.10.1 Proposed Action

No solid waste would be produced as a direct result of the Proposed Action. However, since water that would be exchanged/transferred would be used for irrigation of agricultural lands, the Proposed Action would increase agricultural production and, therefore, increased generation of solid waste would be expected. This increase would not result in a significant impact to solid waste management because solid waste generation from agricultural production is limited, this small increase would not strain existing waste disposal capacities, and disposal of solid waste would be dispersed across many solid waste management facilities. Additionally, transfer of water to and subsequent groundwater recharge by the KCWA would not generate any solid waste.

4.10.2 No-Action Alternative

No impacts to solid waste would occur under the No-Action Alternative.

4.10.3 Mitigation Measures

No mitigation measures would be required, due to the insignificance of solid waste impacts.

4.11 HAZARDOUS MATERIALS/HAZARDOUS WASTE MANAGEMENT

A project would result in a significant impact to hazardous materials/hazardous waste management if project activities increased the potential for exposure to hazardous materials/waste or increased the

likelihood of a hazardous material release to the environment. Impacts to hazardous materials/hazardous waste management would also be considered significant if they resulted in noncompliance with applicable regulatory guidelines or increased the amounts generated beyond available waste management capacities.

4.11.1 Proposed Action

No significant generation of hazardous materials would occur due to the Proposed Action. Water subject to transfer/exchange would be conveyed in existing facilities and would not cause or contribute to any production of or exposure to hazardous materials. All potential recipients of transfers/exchanges would be existing agricultural lands irrigated within the last 3 years. Therefore, the Proposed Action would result in no significant change to hazardous material or hazardous waste use, production, or management.

Moreover, the KCWA's involvement in the Proposed Action would not generate any significant impacts to hazardous materials/hazardous waste management, as the purposes for which this water will be used will not cause the release of or exposure to any hazardous substance.

4.11.2 No-Action Alternative

There would be no hazardous materials/hazardous waste management impacts associated with the No-Action Alternative.

4.11.3 Mitigation Measures

No significant impact to hazardous materials/hazardous waste management would occur under the Proposed Action, therefore, no mitigation measures would be required.

4.12 SOCIOECONOMICS

An impact to socioeconomics would be considered significant if it substantially altered the location and distribution of the population in the project area, caused the population to exceed historic growth rates, decreased jobs so as to substantially raise the regional unemployment rates or reduce income generation, substantially affected the local housing market and vacancy rates, or resulted in the need for new school services.

4.12.1 Proposed Action

Under the Proposed Action, beneficial socioeconomic impacts would be accrued. Lands devoted to agricultural uses that would otherwise be fallow and under-irrigated due to lack of available water would be supplied with sufficient water to resume or supplement irrigation. This would create employment opportunities in the agricultural sector.

The Proposed Action would result in beneficial socioeconomic impacts in other sectors as well. Increased agricultural production resulting from water transfers/exchanges would lead to increased demand for inputs needed to grow crops, such as fertilizer and machinery, and increased farm revenues. These increased demands generate income and employment within the various input sectors. Income generated within these input sectors is then spent on other goods and services, multiplying the impacts of the original change in farm production input expenditures.

Water transfer to and groundwater recharge by the KCWA under the Proposed Action would not negatively impact socioeconomics. Later, beneficial use of this water could result in beneficial socioeconomic impacts

4.12.2 No-Action Alternative

The No-Action Alternative would not cause any changes to population, labor, or housing. Therefore, there would be no impact on socioeconomics.

4.12.3 Mitigation Measures

Socioeconomic impacts from the Proposed Action would be less than significant, therefore, no mitigation measures would be required.

4.13 HEALTH AND SAFETY

A health and safety impact would be considered significant if it created a potential public health hazard or involved the use, production, or disposal of materials that pose a hazard to people, animals, or plant populations in the affected area.

4.13.1 Proposed Action

There would be no direct health and safety impacts under the Proposed Action. The Proposed Action would result in increased agricultural activity in the project area, however, with OSHA and Cal/OSHA compliance, there would be no significant health and safety impacts.

4.13.2 No-Action Alternative

There would be no impacts to health and safety under the No-Action Alternative.

4.13.3 Mitigation Measures

No significant health and safety impact would occur under the Proposed Action, therefore, no mitigation measures would be required.

4.14 VISUAL RESOURCES

A visual resource impact would be considered significant if it interfered with existing scenic views, blocked visibility, or produced light and glare inconsistent with existing area uses.

4.14.1 Proposed Action

Under the Proposed Action, agricultural lands previously irrigated within the last 3 years would potentially receive transferred/exchanged water. The visual character of lands irrigated in the past for agricultural purposes will not be altered due to the resumption of irrigation and agricultural use. Neither scenic views nor visibility would be significantly impacted. Therefore, the Proposed Action would result in no significant impacts to visual resources.

Receipt, groundwater recharge, and later distribution of water by the KCWA would not significantly impact visual resources.

4.14.2 No-Action Alternative

No impacts to visual resources would occur as a result of the No-Action Alternative.

4.14.3 Mitigation Measures

No significant impacts to visual resources would occur under the Proposed Action, therefore, no mitigation measures would be required.

4.15 UTILITIES

A project may have significant effects on utilities if it increases demand in excess of utility system capacity to the point that substantial expansion would be necessary. Significant environmental impacts could also result from system deterioration due to improper maintenance or extension of service beyond its useful life.

4.15.1 Proposed Action

Since, under the Proposed Action, transfers/exchanges would be conveyed using existing facilities, there would be no adverse impacts to utilities in the project area.

Groundwater recharge by the KCWA would not result in significant adverse impacts to utilities.

4.15.2 No-Action Alternative

Under the No-Action Alternative, utilities would not be impacted.

4.15.3 Mitigation Measures

No significant impacts to utilities would be expected under the Proposed Action, therefore, no mitigation measures would be required.

4.16 ENVIRONMENTAL JUSTICE

Environmental justice is defined by the U.S. EPA as "The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies."

Executive Order (EO) 12898, "General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," requires all federal agencies to adopt strategies to address environmental justice concerns within the context of agency operations.

A significant impact to environmental justice may occur if:

- There would be a significant adverse impact to the natural or physical environment or to health that affects a minority or low-income population or children;
- There would be a significant adverse environmental impact on minority or low-income populations or children that appreciably exceeds those on the general population or other comparison group;

- The risk or rate of environmental hazard exposure by a minority or low-income population would be significant and would exceed those on the general population or other comparison group; or

- A health or environmental effect would occur in a minority or low-income population affected by cumulative or multiple adverse exposures from environmental hazards.

4.16.1 Proposed Action

No minority or low-income populations would be adversely affected, directly or indirectly, by the Proposed Action. No burden would be placed disproportionately on any group due to the transfer of water for agricultural benefit. Benefits may result, however, for low-income populations. A predominance of agricultural employment opportunities related to field maintenance and production are taken by members of low-income groups. Since the quantity of such jobs is expected to increase following under the Proposed Action, a benefit to low-income groups would be expected.

4.16.2 No-Action Alternative

No environmental justice impacts would occur under the No-Action Alternative.

4.16.3 Mitigation Measures

Because the impacts from the Proposed Action would be less than significant, no mitigation measures would be required.

4.17 CUMULATIVE IMPACTS

As required in 40 CFR 1508.25, cumulative impacts must be considered when defining the scope of a project under NEPA. Included in this section is a discussion of reasonably foreseeable actions that may occur near the project area, and the type of cumulative impacts that may occur as a result of these projects occurring in conjunction with the Proposed Action or Alternatives.

Cumulative impacts are the total impacts generated by planned and approved projects that are or would be accomplished concurrently. Assessment of cumulative impacts examines the consequences of multiple sources of environmental impact that affect the same valued environmental components.

Cumulative impacts may arise in three ways:

- Disturbances that recur through time;

- The same type of disturbance that occurs over a limited area; and

- Different disturbances that affect the same or similar environmental resources.

4.17.1 Reasonably Foreseeable Actions in the Project Area

Long Term Contract Renewals

Long Term Contract Renewals will be impacting all CVP water contractors in the coming year. As the water contractors' current contracts expire, long term contracts are being renegotiated for a 25-year term

to ensure compliance with CVPIA requirements. Potential changes to water contracts include changes in water pricing and decreases in contract quantity.

Historic Water Transfers and Exchanges

Historic Water Transfers and Exchanges have been approved in both the Friant Division and the San Luis Unit for the years 2000 through 2005. The Friant Division is authorized to move up to 150,000 acre-feet of water intra-divisionally each year to balance overages and shortfalls within their own division. The south of Delta water users have the same water exchange and transfer capability for 250,000 acre-feet per year. These historic water transfers and exchanges help to optimize beneficial use of water. Despite this flexibility in moving water within the units, the San Luis Unit is still not receiving adequate water supplies.

San Joaquin River Exchange Contractors Temporary Water Transfers

Temporary water transfers from the San Joaquin River Exchange are also approved for water years 2000 through 2005. These temporary water transfers, limited to 84,000 acre-feet per year, are needed to optimize the use of limited existing water resources for both agriculture and fish and wildlife resources. The Department of the Interior (Interior) is seeking additional water to provide wildlife refuges with Level 4 water supplies. Level 4 water supplies are the amount needed for optimal management of the refuges, as defined in the CVPIA. These temporary water transfers help to optimize beneficial use of water. Despite this flexibility in water transfer/exchange, the San Luis Unit is still not receiving adequate water supplies.

San Joaquin River Riparian Habitat Restoration Program

In the Friant Division, the San Joaquin River Riparian Habitat Restoration Program 2000 pilot project is under way. The Bureau of Reclamation is conducting a pilot project on the San Joaquin River to assist in the development of a plan for riparian habitat restoration of the upper portion of the San Joaquin River, from Friant Dam to the Merced River. To guide the development of the plan, including the hydrologic/hydraulic modeling effort, Reclamation proposes to modify releases from Friant Dam during the period of June 9 to October 1, 2000, for the purpose of obtaining data on the establishment of riparian seedlings in the downstream channel and on groundwater and surface water conditions in the project area. After this project is complete, efforts will continue to optimize riverine and riparian conditions along the San Joaquin River with no net loss of water supply to existing water users. This project may impact the timing of water availability for transfer and also potentially decrease the availability of 215 water for transfer.

4.17.2 Proposed Action

Environmental restrictions have limited CVP deliveries to westside CVP contractors to approximately 60 percent of contracted supply. The Proposed Action, in combination with other reasonably foreseeable actions, would benefit westside CVP contractors and agricultural resources by reducing shortfalls in water supply. However, it is unlikely that this water, in combination with other reasonably foreseeable actions, would result in deliveries westside CVP contractors in excess of the historical average water supply.

Additionally, implementation of the Proposed Action would provide water for agricultural lands irrigated within the last 3 years. Thus, the Proposed Action, in combination with other reasonably foreseeable actions, would not result in cumulative impacts to land use through land use change or biological resources through habitat destruction or degradation.

Finally, the Proposed Action would not result in cumulative impacts to hydrologic resources, noise, geology and soils, recreational resources, solid waste management, hazardous materials/hazardous waste management, socioeconomics, health and safety, visual resources, utilities, or environmental justice. Therefore, the Proposed Action, in combination with reasonably foreseeable actions in the project area, would not result in significant cumulative adverse impacts.

4.17.3 No-Action Alternative

Under the No-Action Alternative, no new water transfer/exchange activities would occur. Therefore, no cumulative impacts would occur.

4.17.4 Mitigation Measures

Mitigation measures for individual issue areas would also serve to reduce cumulative impacts to less than significant levels.